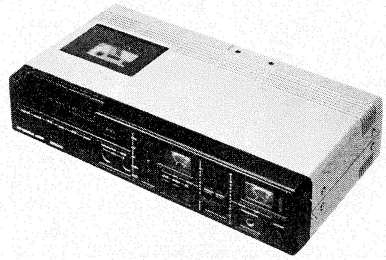
# Teleton

# SERVICE MANUAL

## Stereo Cassette Deck

## MODELS CD-250 CD-250B

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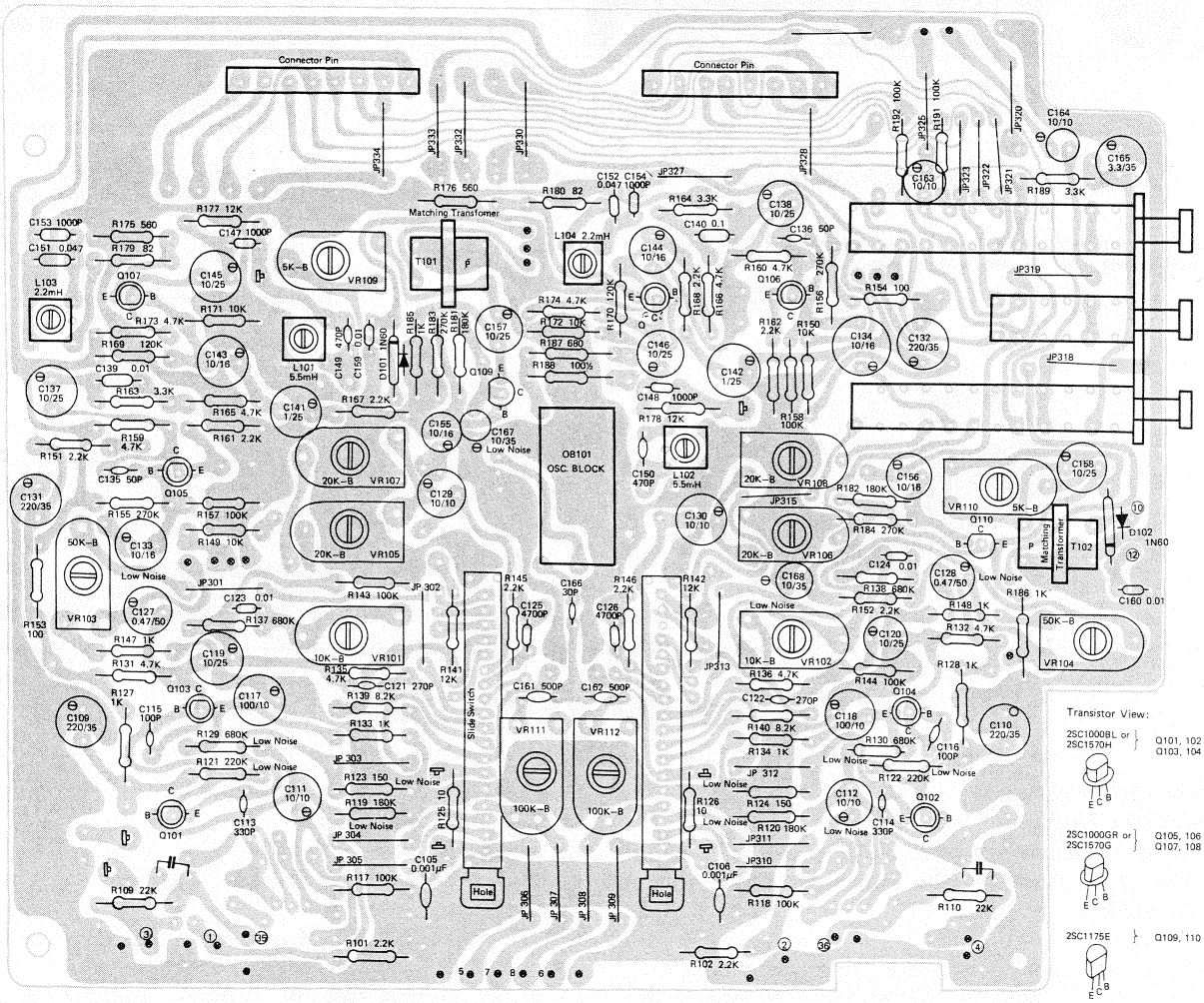
Specifications are subject to change without notice.

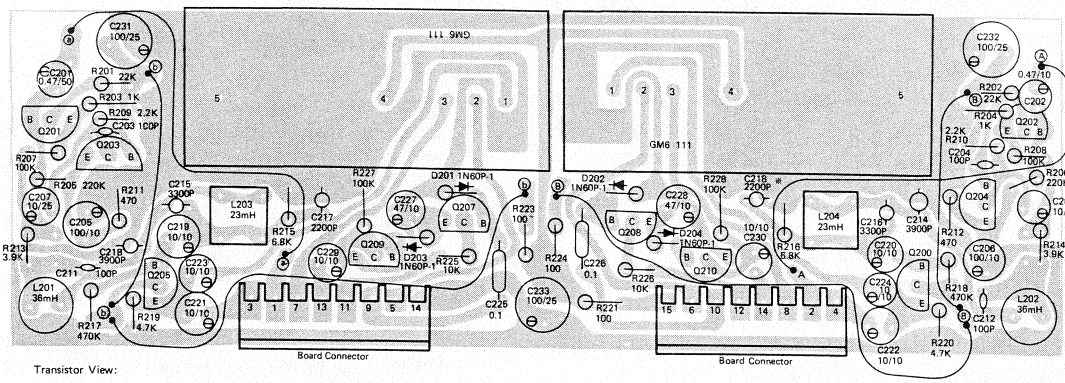
# ALIGNMENT PROCEDURE

1. Tape Speed Adjustment
   Equipment Required:
   a) Standard alignment tape of 3 KHz
   b) Wow & Flutter Meter with Tape Speed Meter
   c) Amplifier
   Procedure:
   1) Connect the deck and speakers to the amplifier.
   2) Connect the Wow & Flutter Meter to one of the speakers and playback the standard test tape.
   3) Adjust *VR on the motor electronic governor circuit to indicate 3 KHz on the center frequency range of the meter.
   *This VR is installed inside the motor case.
   The VR is covered by a black rubber shroud, but there is a cross-shaped cut in the rubber to allow access to the VR.
2. Head Azimuth Alignment
   Equipment Required:
   a) Standard alignment tape of 10 KHz
   b) VTVM or Output Meter
   Procedure:
   1) Connect the VTVM or Output Meter to one of the speakers and playback the test tape.
   2) Adjust the azimuth alignment screw to obtain maximum output voltage on the VTVM or Output Meter.
3. Meter Sensitivity Adjustment
   Equipment Required:
   a) VTVM
   b) Test Tape: Dolby Level Set Tape
   Procedure:
   1) Connect the VTVM to the Din (Aux) Output (L ch.) terminal and playback the test tape.
   2) Set Output Control (VR401, 10KΩB) to maximum, and adjust VR103 (50KΩB) to obtain 1V output voltage.
   3) Adjust VR109 (5KΩB) to indicate +3VU on the VU meter.
   4) And then adjust R ch. same as L ch.
   Adjust Controls VR402, VR104 and VR110.
4. Output VR Level Adjustment
   Equipment Required:
   a) VTVM
   b) Test Tape: Dolby Level Set Tape
   Procedure:
   1) Connect the VTVM to the Din (Aux) Output (L ch.) terminal and playback the test tape.
   2) Set Output Control (VR401, 10KΩB) to obtain 350mV output voltage.
   3) And then adjust VR402 same as VR401.
5. Record Bias Adjustment
   Equipment Required:
   a) VTVM
   Procedure:
   1) Connect the VTVM to both sides of R125 (10 ohm) on the printed circuit board for the left channel.
   2) Set Selector Switch to Record Mode.
   3) Adjust VR111 (100K ohm –B) to obatain 4.5mV on the VTVM at tape selector chrome position.
   4) Confirm voltage value to obtain 2.5mV at tape selector normal position.
   5) Change the connection to the right channel resistor R126 (10 ohm) and adjust VR112 to obtain 4.5mV at tape selector chrome position.
   6) Confirm voltage value to obtain 2.5mV at tape selector normal position.
6. Record Caliblation
   Equipment Required:
   a) VTVM
   b) Signal Generator
   Procedure:
   1. Connect a source of 400 Hz signal to Din (Aux) input (L+R). With tape selector normal position, record on blank iron-based tape and adjust Record Level control so that meters read OVU.
   2. Without altering the Record Level control settings, adjust the $Fe_2O_3$ Rec. cal. VR105, 106 (20K ohm –B) as required and playing back the recorded tape, the meters read OVU.
   3. Repeat steps 3) and 4) with chrome-based tape (tape selector in the $CrO_2$ position) using the $CrO_2$ Rec. cal. VR103, 104 (20K ohm –B).

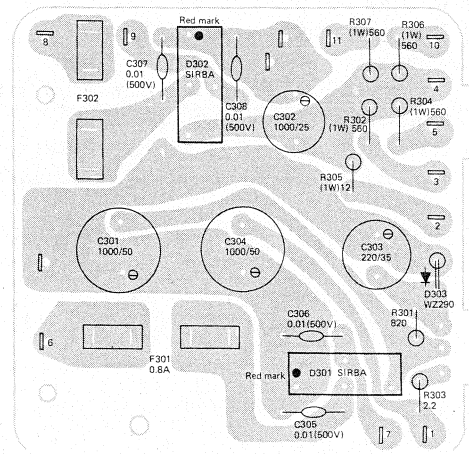
# RS P. C BOARD (RS-250)



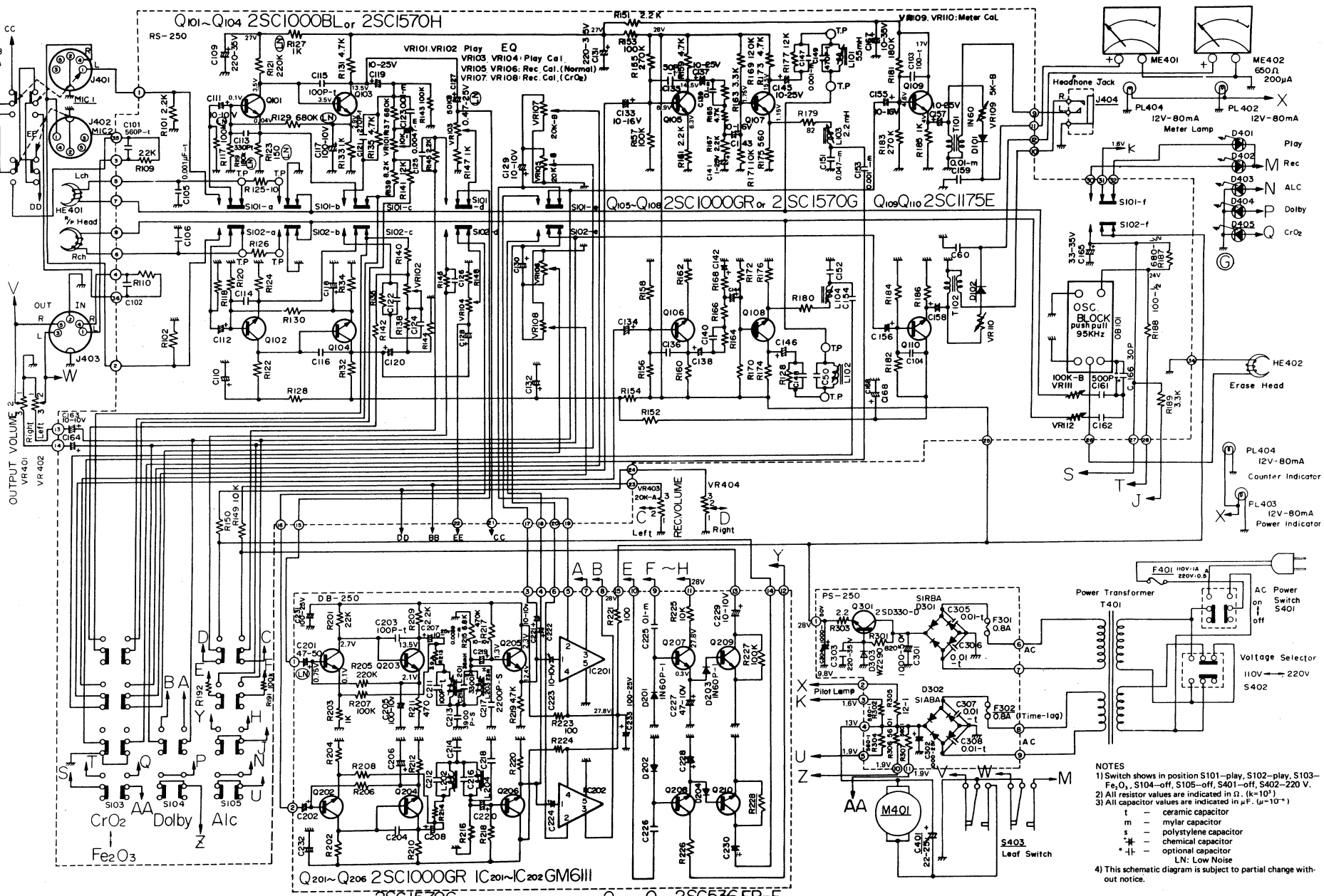

# DB P. C. BOARD (DB-250)




# PS P. C. BOARD (PS-250)



# SCHEMATIC DIAGRAM




NOTES

1) Switch shows in position S101—play, S102—play, S103—$Fe_2O_3$, S104—off, S105—off, S401—off, S402—220 V.
2) All resistor values are indicated in Ω. (k=$10^3$)
3) All capacitor values are indicated in μF. (μ=$10^{-6}$)

- t — ceramic capacitor
- m — mylar capacitor
- s — polystylene capacitor
- ⁺ — chemical capacitor
- ⁺ — optional capacitor LN: Low Noise

4) This schematic diagram is subject to partial change without notice.

# PARTS LIST

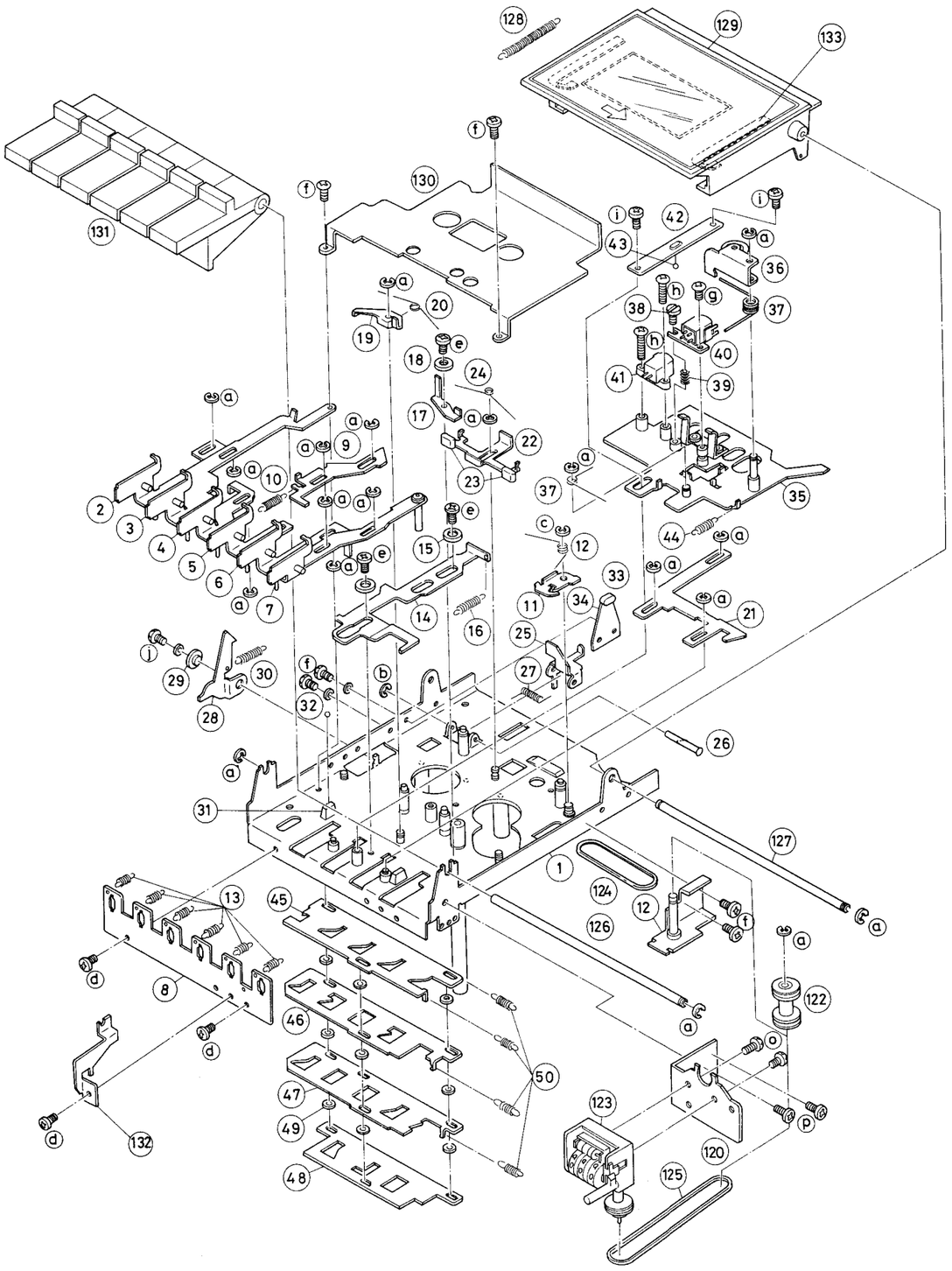
(Standard Parts as Resistors, Capacitors etc., not listed here.)

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| **Cabinet** | | |
| | R840816 | Top Cabinet (Silver) |
| | R840832 | Top Cabinet (Black) |
| | R840817 | Bottom Cabinet (Silver) |
| | R840833 | Bottom Cabinet (Black) |
| | R830595 | Leg |
| | R840815 | Front Panel |
| | R811720 | Counter Cover |
| | R811459 | Power Indicator |
| | R871399 | Slide Volume Knob |
| | R871405A | Push Knob |
| | | Screw Type |
| | | Speed Knut (Used for Rear Cabinet) |
| **Chassis** | | |
| | R610480 | Center Deck |
| T401 | R110202 | Power Transformer |
| P401 | R440126 | Power Supply Cord |
| | R811577 | Cord Stopper |
| S402 | R424003 | Seesaw Switch |
| J403 | R439011 | DIN 5P Jack |
| VR401, 402 | R361213 | Rotary Volume |
| | R434008 | Fuse Holder (for 20mm Type) |
| F401 | R412046 | Fuse 250V 1A (At AC line 110V) |
| F401 | R412044 | Fuse 250V 0.5A (At AC line 220V) |
| | R610479 | Front Deck |
| | R437012 | 1P Terminal Chip. |
| | R676257 | Spacer |
| | R700448 | Spring |
| S401 | R429110 | AC Power Switch |
| ME401, 402 | R590112 | Level Meter |
| J404 | R439083 | Headphone Jack |
| VR403, 404 | R361214 | Slide Volume |
| | R530579 | LED P.C. Board |
| D403, 405, D404 | | LED Yellow |
| D402 | | LED Red |
| D401 | | LED Green |
| J401 – 404 | R439028 | DIN 5P Jack with Switch |
| PL401 – 403 | R411153 | 12V 80mA |
| PL404 | R411154 | 12V 80mA |
| | R830589 | Lamp Holder |
| **REC/PLAY P.C. Board (RS-250)** | | |
| | R530576 | R/P P.C. Board |
| | R436031 | P.C. Board Terminal |
| | R439076 | Connector Pin |
| S101, 102 | R422067 | Slide Switch |
| OB101 | R162020 | Oscillator Block |
| T101, 102 | R130020 | Matching Transformer |
| L101, 102 | R161008 | Trap Coil 5.5mH ±20% Variable |
| L103, 104 | R161007 | EQ Coil 2.2mH ±20% Variable |
| S103, 104, 105 | R429114 | Push Switch |
| | R437011 | Lontal Pin |
| | R382047 | Semi-Fixed Variable Resistor 5KΩ B |
| | R382028 | Semi-Fixed Variable Resistor 10KΩ B |
| | R382036 | Semi-Fixed Variable Resistor 20KΩ B |
| | R382029 | Semi-Fixed Variable Resistor 50KΩ B |
| | R382030 | Semi-Fixed Variable Resistor 100KΩB |
| Q101, 102 | | Transistor 2SC1570-H or 2SC1000-B1 |
| Q105, 106, 107, 108 | | Transistor 2SC1570-G or 2SC1000-GR |
| Q109, 110 | | Transistor 2SC1175E |
| D101, 102 | | Diode 1N60 |
| **Dolby P.C. Board (DB-250)** | | |
| | R530575 | DB P.C. Board |
| | R439075 | Board Connector |
| L203, 204 | R154094 | Filter Coil 23mH ±20% Variable |
| L201, 202 | R154091 | Filter Coil 36mH |
| IC201, 202 | | Dolby Unit GM-6111 |
| Q201, 202, 203, 204, 205, 206 | | Transistor 2SC1570-G or 2SC1000-BL |
| Q207, 208, 209, 210 | | Transistor 2SC536-F or 2SC372-GR |
| Q201, 202 203, 204 | | Diode 1N60P-1 |
| **Power Supply P.C. Board (PS-250)** | | |
| | R530572 | PS P.C. Board |
| | R436031 | P.C. Board Terminal |
| | R434013 | Fuse Holder |
| F301 | R412069 | Fuse 250V-0.8A |
| F302 | R412070 | Fuse 250V-0.8A Time Lag. |
| D301, 302 | | Silicon Rectifier SIR BA |
| D303 | | Zener Diode WZ290 |
| Q301 | | Transistor 2SD330-D |
| **CD-250 Mechanism** | | |
| 1 | 200942 | Chassis Stake Ass'y |
| 2 | 402152 | Stop Lever Ass'y |
| 3 | 301153 | Rec. Lever Ass'y |
| 4 | 401154 | Rew. Lever Ass'y |
| 5 | 401155 | Play Lever Ass'y |
| 6 | 401156 | FF Lever Ass'y |
| 7 | 401157 | Pause Lever Ass'y |
| 8 | 401013 | Push Lever Guide |
| 9 | 401026 | Pause Operating Plate |
| 10 | 404109 | Spring |
| 11 | 401024 | Pause Lock |
| 12 | 404105 | Pause Lock Spring |
| 13 | 404107 | Spring |
| 14 | 401014 | Brake Operating Plate |
| 15 | 402070 | Operating Plate Guide |
| 16 | 404320 | Spring for Wave Board |
| 17 | 401033 | Pause Lever |
| 18 | 402070 | Operating Plate Guide |
| 19 | 401021 | Rev. Cue Lever |
| 20 | 404117 | Rev. Cue Spring |
| 21 | 401027 | Rev. Operating Plate |
| 22 | 401023 | Brake Arm |
| 23 | 405122 | Rubber Ring |
| 24 | 404116 | Brake Spring |
| 25 | 401025 | Rec. Lock Lever |
| 26 | 402056 | Rec. Lock Shaft |
| 27 | 404210 | Spring for Rec. Lock Lever |
| 28 | 401022 | Lock Lever for Cassette Case |
| 29 | 402086 | Play Lever Push |
| 30 | 404109 | Spring |
| 31 | 403099 | Support |
| 32 | 402139 | Steel Ball, 2φ |
| 33 | 405122 | Rubber Ring |
| 34 | 401046 | Cassette Up Stopper |
| 35 | 301161 | Head Chassis Stake Ass'y |

| REF. NO. | PARTS NO. | DESCRIPTION |
|---|---|---|
| 36 | 401162 | Pinch Roller Lever Ass'y |
| 37 | 404115 | Spring |
| 38 | 402063 | Head Adjust Pin |
| 39 | 404111 | Head Adjust Spring |
| 40 | R461058 | RP Head |
| 41 | R461032 | E Head |
| 42 | 401030 | Leaf Spring |
| 43 | 402139 | Steel Ball, 2φ |
| 44 | 186111503 | Spring |
| 45 | 401010 | Stop Cam |
| 46 | 401598 | Play Rec. Lock Cam |
| 47 | 401009 | FF • Rew. Lock Cam |
| 48 | 401011 | Rev. Cue Cam |
| 49 | 409132 | Mylar Washer for Cam |
| 50 | 404106 | Spring |
| 51 | 401164 | Take Up Idler Arm (A) Ass'y |
| 52 | 401165 | Take Up Idler Arm (B) Ass'y |
| 53 | 402059 | Take Up Idler Bush |
| 54 | 403096 | Take Up Idler (Large) |
| 55 | 408126 | Take Up Clutch |
| 56 | 403093 | Take Up Idler (Small) |
| 57 | 404112 | Take Up Clutch Spring |
| 58 | 409144 | Washer |
| 59 | 404106 | Spring |
| 60 | 401167 | FF Idler Lever Stake |
| 61 | 403097 | Idler |
| 62 | 3 x 6 x 0.2t | Mylar Washer |
| 63 | 404106 | Spring |
| 64 | 402086 | Play Lever Bush |
| 65 | 401169 | Idler Arm Stake |
| 66 | 3 x 6 x 0.2t | Mylar Washer |
| 67 | 403097 | Idler |
| 68 | 404108 | Spring |
| 69 | 401171 | Rew. Idler Lever Stake |
| 70 | 3 x 6 x 0.2t | Mylar Washer |
| 71 | 403097 | Idler |
| 72 | 404382 | Rew. Spring |
| 73 | 402086 | Play Lever Bush |
| 74 | 401173 | Lock Release Arm Stake |
| 75 | 403101 | Lock Release Lever |
| 76 | 404107 | Spring |
| 77 | 301177 | Reel Table Chassis Ass'y |
| 78 | | E Ring, 5φ |
| 79 | 401040 | Spacer |
| 80 | 409223 | Mylar Washer |
| 81 | 404484 | Spring for Reel Table |
| 82 | 403090 | Wheel |
| 83 | 408127 | Felt Washer |
| 84 | 401040 | Spacer |
| 85 | | E Ring, 5φ |
| 86 | 404041 | Washer |
| 87 | 404103 | Pressure Spring |
| 88 | 404041 | Washer |
| 89 | 303095 | Motion Pulley |
| 90 | 408127 | Felt Washer |
| 91 | 303088 | Reel Table |
| 92 | | E Ring, 5φ |
| 93 | 401040 | Spacer |
| 94 | 409223 | Mylar Washer |
| 95 | 404484 | Reel Table Spring |
| 96 | 403090 | Wheel |
| 97 | 408127 | Felt Washer |
| 98 | 401040 | Spacer |
| 99 | | E Ring, 5φ |
| 100 | 303088 | Reel Table |
| 101 | 403098 | Cap |
| 102 | 401133 | Stopper |
| 103 | 401636 | Slide Plate |
| 104 | 402086 | Play Lever Bush |
| 105 | 404104 | Spring for Slide Plate |
| 106 | 401178 | Motion Lever Ass'y |
| 107 | 401035 | Lod |
| 108 | 401034 | Lod Holder |
| 109 | 303179 | Gear Holder Ass'y |
| 110 | 306123 | Flywheel |
| 111 | 404129 | Fly-wheel Spacer |
| 112 | 401031 | Fly-wheel Retainer |
| 113 | 409130 | Bearing Spacer |
| 114 | 407125 | Bearing |
| 115 | 401032 | Motor Bracket |
| 116 | 402232 | Motor Pulley |
| 117 | R480043 | DC Motor |
| 118 | 405118 | Fly-wheel Belt |
| 119 | 405619 | Belt, 1.2 □ |
| 120 | G-48733 | Counter Bracket |
| 121 | G-48732 | Repeating Pulley Holder |
| 122 | R644050 | Repeating Pulley |
| 123 | R590113 | Counter |
| 124 | 405935 | Counter Belt A |
| 125 | 405936 | Counter Belt B |
| 126 | 402187 | Button Shaft |
| 127 | 402064 | Cassette Case Shaft |
| 128 | R700342 | Cassette Up Spring |
| 129 | R811722 | Cassette Case |
| 130 | R652202 | Mech. Cover |
| 131 | R811723 | Cassette Button |
| 132 | R652240 | Button Shaft Holder |
| 133 | R700438 | Tape Holder Spring |
| a | | E Ring 2.5φ |
| b | | E Ring 1.5φ |
| c | | E Ring 3φ |
| d | | Pan Headed Screw 2.6 x 3 |
| e | | Flat Headed Screw 2.6 x 4 |
| f | | Pan Headed Screw 2.6 x 4 |
| g | | Pan Headed Screw 2 x 4 |
| h | | Pan Headed Screw 2 x 6 |
| i | | Pan Headed Screw 2.6 x 5 |
| j | | Pan Headed Screw 2.6 x 6 |
| k | | Pan Headed Screw 2.6 x 5 |
| l | | Pan Headed Screw 3 x 8 |
| m | | Flat Washer M3φ x 0.5t |
| n | | Machine Screw of Hexagon Socket Head 2 x 3 |
| o | | Pan Headed Screw 3 x 6 |
| p | | Pan Headed Screw 3 x 4 |

# CASSETTE MECHANISM

(TOP VIEW)




(BOTTOM VIEW)